

A laurel wreath made of green leaves with black outlines, forming a semi-circle. In the center of the bottom of the wreath is a yellow square with a black border.

DOE METROLOGY COMMITTEE

*A Topical Committee
of the
DOE Technical Standards
Program*

POSITION PAPER



DEPARTMENT OF ENERGY METROLOGY COMMITTEE

A TOPICAL COMMITTEE OF THE
DEPARTMENT OF ENERGY
TECHNICAL STANDARDS PROGRAM

Position Statement on
**THE ADOPTION OF UNIFORM QUALITY STANDARDS
FOR METROLOGY LABORATORIES***

Date Issued: May 1998

* Please note that this position paper by the DOE Metrology Committee is not intended to state DOE policy. Rather, it is a recommendation by subject matter experts from throughout the complex, including both DOE personnel and contractors. Nor does it state an official position or recommendation by TSPO. However, the DOE metrology community appears largely in favor of the adoption of ISO Guide 25; therefore, we encourage full and careful consideration of that consensus. — *Richard J. Serbu (DOE/HQ), Manager, TSPO.*

References

1. ANSI/NCSL Z540-1, *Calibration Laboratories and Measuring and Test Equipment – General Requirements*, 1994.
2. ISO Guide 25, *General Requirements for the Competence of Calibration and Testing Laboratories*, 1990.

Introduction

During the second annual meeting of the DOE Metrology Committee (the Committee), three major issues pertaining to metrology operations were identified: uniformity, communication and resources. Subsequently, working groups for each issue were formed. The uniformity working group (the group) developed a task statement: “**To determine a minimum, common set of guidelines, based on national and international standards (utilizing ANSI/NCSL Z540-1 and ISO Guide 25), that is acceptable to all Department of Energy programs.**” The working group developed a questionnaire to survey DOE metrology, testing and analytical laboratories to determine what standards are currently in effect.

Current Situation

The group surveyed 30 DOE metrology laboratories about the standards with which laboratories had to comply. Eighteen laboratories responded. Eleven laboratories currently comply with ANSI/NCSL Z540-1 and two with ISO Guide 25, as well as other standards. In all, the eighteen respondents reported compliance with an array of standards. These results are tabulated in the following table:

| Standard | No. of laboratories |
|------------------------------|---------------------|
| DOE Laboratory Accreditation | 2 |
| NIST Handbook 150 | 5 |
| ANSI/NCSL Z540-1-1994 | 11 |
| ANSI/ASQC Q9001-1-1994 | 0 |
| ANSI/ASQC Q9002-1-1994 | 1 |
| ANSI N323-1978 | 3 |
| ISO 10012-1:1993 (E) | 0 |
| ISO/IEC Guide 25:1990 | 2 |
| ANSI/IEEE 498-1985 | 1 |
| 10CFR 830.120 | 4 |
| DOE 5700.6C | 8 |
| OTHER | 8 |

Position Advanced

Based on a review of the current situation within DOE and both nationally and internationally, the Committee recommends the use of ANSI/NCSL Z540-1 as the standard for calibration laboratories, and ISO Guide 25 as the standard for testing and analytical laboratories through out all of DOE. The Z540 standard is derived in large part from ISO Guide 25, but is tailored for use by calibration laboratories. (At its next revision, this guide will be issued as ISO standard 17025.) It is the sense of the Committee that adoption of these two complementary standards would allow for greater uniformity of laboratories and their suppliers, compatibility with national and international standards, and would result in a number of significant benefits to the DOE and its metrology laboratories. The benefits are listed below.

Cost/Benefit Rationale

1. Adoption of these voluntary standards allows the DOE to comply with the Technology Transfer Act (PL 104-113) and OMB Circular A-119, in the areas of testing and calibration.
2. Compliance with these standards prepares laboratories for laboratory accreditation, which is becoming the accepted method for recognizing laboratory competence.

3. Compliance with this minimum number of standards for all DOE programs means reduced costs associated with the maintenance of documentation for metrology laboratories, especially if they support several DOE programs.
4. Compliance with Z540 and Guide 25 requires technical competency, which should result in improved laboratory performance.
5. Acceptance of laboratory measurements and tests in international circles is dependent on compliance with ISO Guide 25, which is soon to become ISO standard 17025.
6. By accepting these standards, DOE is aligning itself with the national and international calibration and testing communities.
7. By adopting these standards, the credibility of DOE programs is enhanced in the eyes of the public sector, including industry and public interest groups.
8. Since these standards are compatible with current industry practice, DOE will reduce costs when teaming with industry on joint projects.

Conclusion

By adopting ANSI/NCSL Z540-1 for calibration laboratories and ISO Guide 25 for testing and analytical laboratories throughout DOE, the DOE would be strengthened technically, brought into compliance with public law, and be more in harmony with the national and international community.

